

In the Claims:

Please amend the claims as follows:

1. (Currently Amended) A method of updating a communications key maintained in a unit for communicating with a communications system, said method comprising:

generating a new communications key using a secret value stored in said unit;

generating an update key using said secret value stored in said unit;

generating a signature value using said update key;

comparing said signature value with a signature value received from a visiting communications system of said communications system which was generated by said visiting communications system using said update key derived by a home communications system of said communications system
performing an authentication using said update key; and

updating said communications key with said new communications key depending
on the results of said comparison~~after said authentication.~~

2. (Currently Amended) The method of claim 1 comprising:

receiving an update sequence; and

generating said new communications key using a secret value stored in said unit and said update sequence;

~~generating a signature value using said update key; and~~

~~comparing said signature value with a signature value received from said communications system which was generated using said update key to perform said authentication.~~

3. (Currently Amended) The method of claim 2 further comprises:

generating a challenge sequence;

sending said challenge sequence to said visiting communications system;

generating said signature value using said challenge sequence and said update key;

receiving said signature string generated by said visiting communications system using said challenge sequence and said update key; and

comparing said signature value with said signature value generated by said visiting communications system.

4. (Currently Amended) The method of claim 3 comprises:
generating a second signature value using said update sequence and said update key; and

sending said second signature value to said visiting communications system for comparison with a second signature value generated by said visiting communications system using said sequence and said update key generated at said communications system.

5. (Original) The method of claim 3 wherein said generating said signature value includes:

developing a signature string comprising at least portions of said update sequence, said challenge sequence and said update key; and
generating said signature value from at least said signature string.

6. (Original) The method of claim 4 wherein said generating said signature value includes:

developing a second signature string comprising at least portions of said update sequence, said challenge sequence and said update key; and
generating said second signature value from at least said second signature string.

7. (Currently Amended) A method of updating a communications key maintained in a unit and in a communications system, said method comprising:

receiving by a visiting communications system from a home communications system an update sequence and an update key derived by said home communications

system using a secret value associated with said unit and stored in said home communications system;

sending by said visiting communications system to said unit ~~said~~ an update sequence for said unit to generate a new communications key using a secret value in said unit;

generating a signature value at said visiting communications system using said update key derived by said home communications system;

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sending by said visiting communications system to said unit ~~said~~ a signature value for said unit to compare said signature value generated at said communications system using an update key derived from a secret value stored in said communications system associated with said unit generated at said visiting communications system for said unit to compare with a signature value generated at said unit using an update key generated by said unit using said secret value stored in said unit; and

receiving an update confirmation depending on the results of said comparison ~~after which said communications key is updated with said authentication.~~

8. Cancelled.

9. (Currently Amended) The method of claim 7 wherein said generating a signature value including:

receiving a challenge sequence from said unit; and

generating said signature value using said challenge sequence and said update key.

10. (Original) The method of claim 9 including:

generating a second signature value using said update sequence and said update key; and

receiving a second signature value generated at said unit using said update sequence and said update key at said unit;

comparing with said second signature value with said second signature value generated by said unit.

11. (Original) The method of claim 10 wherein said generating a signature value including:

developing a signature string comprising at least portions of said update sequence, said challenge sequence and said update key; and
generating said signature value from at least said signature string.

12. (Original) The method of claim 10 wherein said generating a second signature value including:

developing a second signature string comprising at least portions of said update sequence, said challenge sequence and said update key; and
generating said second signature value from at least said second signature string.

a1 13. (Currently Amended) A method of updating a communications key maintained in a unit and in a communications system, said method comprising:

generating an update sequence; ~~and~~
generating by a home communications system a new communications key using a secret value stored in said home communications system and associated with said unit ~~and said update sequence;~~

generating by said home communications system an update key using said secret value ~~and said update sequence;~~

sending said update key to a visiting communications system for said visiting communications system to generate a signature value which is sent to said unit for comparison to a signature value generated at said unit using an update key generated at said unit using a secret value stored in said unit;

updating said communications key with said new communications key depending on the results of said comparison ~~after an authentication is performed with said unit using said update key.~~

14. Cancelled.

15. (Original) A method of updating a communications key maintained in a unit and in a home communications system, said method comprising:

receiving an update sequence from said home communications system for said unit to generate a new communications key using a secret value in said unit;

receiving an update key from said home communications system and generated at said home communications system using a secret value associated with said unit at said home communications system;

performing an authentication with said unit using said update sequence; and

sending to said home communications system the results of said authentication.

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16. (New) A communications key update system for updating a communications key maintained in a unit for communicating with a communications system, said system configured to generate a new communications key using a secret value stored in said unit, generate an update key using said secret value stored in said unit, generate a signature value using said update key, compare said signature value with a signature value received from a visiting communications system of said communications system which was generated by said visiting communications system using said update key derived by a home communications system of said communications system, and update said communications key with said new communications key depending on the results of said comparison.

17. (New) A key update system for updating a communications key maintained in a unit and in a communications system, said system configured to receive from a home communications system an update sequence and an update key derived by said home communications system using a secret value associated with said unit and stored in said home communications system, to send to said unit said update sequence for said unit to generate a new communications key using a secret value in said unit, to generate a signature value at said visiting communications system using said update key derived by said home communications system, to send to said unit said signature value

for said unit to compare with a signature value generated at said unit using an update key generated by said unit using said secret value stored in said unit, and to receive an update confirmation depending on the results of said comparison.

a1 18. (New) A key update system for updating a communications key maintained in a unit and in a communications system, said system configured to generate an update sequence, to generate a new communications key using a secret value stored in said system and associated with said unit, to generate an update key using said secret value, to send said update key to a visiting communications system for said visiting communications system to generate a signature value which is sent to said unit for comparison to a signature value generated at said unit using an update key generated at said unit using a secret value stored in said unit, and to update said communications key with said new communications key depending on the results of said comparison.
